The Map Legend

The New Mexico Geographic Information Council, Inc.
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THE MAP Legend
NMGIC, Inc. PO Box 9445 Albuquerque, NM 87119-9445 Est. 1984
http://nmgic.unm.edu

SPOTLIGHT ON LOS ALAMOS NATIONAL LABORATORY'S GIS ACTIVITIES

Whether you're a "foreigner"— from the United States, or some other such strange land — a "New-bie" Mexican, or a native of Nuevo Mañana, you'll probably have some idea of the powerful science that's been going on for over a half century now up on the Plateau above the Rio Grande in northern New Mexico. No, I'm not referring to the astropsychological metaphysics associated with the Taos Hum, or at least I don't believe I am. I speak only of Los Alamos and its National Laboratory, astraddle the canyons, birthplace of some bomb thingee, and home to some pretty powerful GIS these days! Of course its all hush-hush, top secret, for your bandwith only type stuff, and if I told you about it, well you know how the saying goes… at the least they'd probably have to track me down for being so clueless. Anyway, I hope to avoid this by giving you a quick overview of LANL GIS, concentrate on one GIS shop in particular, the GISLab , located in the Environmental Geology and Spatial Analysis Group (or in LabSpeak, "EES-9") and its Enterprise GIS endeavors, and pass along an invitation for you to go to Los Alamos and check out their GIS activities for yourself, this upcoming GIS Day, 19 November 2003.

LANL GIS

GIS activities are located throughout the Los Alamos National Laboratory in a variety of divisions, each concentrating on differing emphases within the GIS discipline. Some of these include:

- **GISLab** of the Earth And Environmental Science Division, which focuses on R&D, support for projects, and intellectual leadership;
- **D-4** of the Decision Applications Division, which focuses on national infrastructure;
- **FWO-IIM** of the Facilities and Waste Operations Division, which focuses on facilities and infrastructure mapping;
- **RRES-IIM** of the Risk Reduction and Environmental Stewardship group, who focus on compliance; and
- **PM-1** of the Project Management and Planning Division, which focuses on planning.

1943 - 2003 Los Alamos NATIONAL LABORATORY *Ideas That Change the World*

All told, LANL GIS, coordinated through the Chief Information Officer's office, has an estimated annual budget of about $10 million, with an investment in GIS infrastructure of more than $50 million. Approximately 50 GIS professionals are employed by the Lab.

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Inside This Issue

The Map Legend

Editor: Dave McCraw
Public Relations

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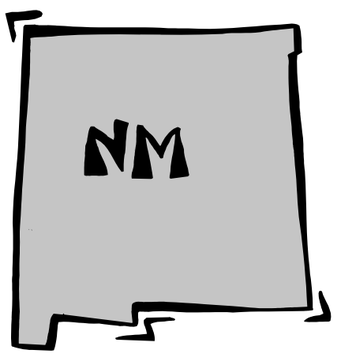


2003 Corporate Sponsors

Thank you for your support!

Calendar

NMGIC Fall Meeting: "GIS – What's the Big Picture? Part I. Adventures in Web Mapping," November 20, 2003. University of New Mexico Science and Technology Park, 801 University Blvd SE, Albuquerque, NM. Contact website at: ***http://nmgic.unm.edu***

NMGIC Workshop: Minnesota Map Server, November 21, 2003. University of New Mexico Science and Technology Park, 801 University Blvd SE, Albuquerque, NM. Contact website at: *http://nmgic.unm.edu*

ArcSDE Administration for Oracle, January 26-30, 2004. Computer Corner, Albuquerque, NM. Contact website at: *http://www.esri.com/company/regions/denver/training.html*

ArcSDE Administration for SQL Server, February 23-27, 2004. Computer Corner, Albuquerque, NM. Contact website at: *http://www.esri.com/company/regions/denver/training.html*

Introduction to ArcGIS I, March 1-2, 2004. Computer Corner, Albuquerque, NM. Contact website at: *http://www.esri.com/company/regions/denver/training.html*

Introduction to ArcGIS II, March 3-5, 2004. Computer Corner, Albuquerque, NM. Contact website at: *http://www.esri.com/company/regions/denver/training.html*

Building Geodatabases I, March 22-24, 2004. Computer Corner, Albuquerque, NM. Contact website at: *http://www.esri.com/company/regions/denver/training.html*

Building Geodatabases II, March 22-24, 2004. Computer Corner, Albuquerque, NM. Contact website at: *http://www.esri.com/company/regions/denver/training.html*

GITA's Annual Conference and Exhibition: "Information, Strategy, Vision…Building Performance for a New Age," April 25-28, 2004. Washington State Trade and Convention Center, Seattle, WA. Contact website at: *http://www.gita.org*

ASPRS 2004 Annual Conference, May 23-28, 2004. Denver, CO. Contact website at: *http://www.asprs.org/denver2004/index.html*

ESRI International User Conference, August 9-13, 2004. San Diego Convention Center, San Diego, CA. Contact website at: http://www.esri.com/events/uc/index.html

Call for Workshop Ideas

If you have a topic you would like to see offered as a workshop, please contact the NMGIC Workshop Coordinator, Rick Koehler using the online form on the NMGIC web site. The form can be accessed at *http://nmgic.unm.edu*.

NMGIC wants to respond to the needs of its members, so please share your desires concerning these workshops.

From the President

I just returned from the Southwest Users Group conference in Jackson, Wyoming, where I was glad to see a large number of fellow New Mexicans participating in the conference. It shows how strong our GIT community is today! Coordinated efforts such as the LANL GIS day in Los Alamos, New Mexico on Wednesday, November 19th, and our NMGIC Fall Meeting and Workshop, Thursday and Friday November 20th and 21st, play an important role in the direction that our state is progressing in towards for the future. I encourage all of you to make your boss aware of this important week and how vital it is for you to attend these informative meetings to better serve your department and the well being of the State of New Mexico.

These events serve as a great forum to see what our peers are doing. They also provide an opportunity to coordinate your projects with others who may have an interest in working with you to offset costs and minimize duplication of efforts. We have all seen this happen too many times. I feel that participating in NMGIC and the New Mexico Geographic Information System Advisory Committee (NMGISAC) will help to keep our state at the forefront of making available great spatial data through our RGIS clearinghouse. Please spread the word and come out in force for New Mexico Geography Week and GIS Day activities.

Due to previous engagements for other GIS Day events, GeoSpatial One-Stop and National Map representatives are unable to come to our Fall Meeting. However, we still have a great lineup that will showcase how folks are using Internet Map Servers within their organizations and the applications that they have developed. We are hoping this will be Part I of a two-part series, with Part II incorporating the GeoSpatial One-Stop and National Map demonstrations and panel discussions. We will keep you informed of details as we schedule Part II of the Internet Map Server series.

I have another request for all of you: we are always looking for people to submit articles for our ***Map Legend***. This is a great newsletter that covers events happening around New Mexico, project descriptions that may interest you, agency announcements, and anything else that comes to mind involving spatial data. Please submit your articles, ideas or announcements to Dave McCraw (*djmc@nmt.edu).*

I hope everyone is enjoying our mild fall weather and are planning to spend time with friends and family over the coming holidays. It is hard to believe we are almost to 2004. Hopefully, it will be a wet year for New Mexico and a prosperous year for all of you!

Bart Matthews
NMGIC President

The Map Legend 2004 Publication Schedule and Deadlines

Winter Issue

Deadline for articles: January 15, 2004
Publication date: February 15, 2004

Spring/ Summer Issue

Deadline for articles: May 15, 2004
Publication date: June 15, 2004

Fall Issue

Deadline for articles: September 15, 2004
Publication date: October 15, 2004

Editors of *The Map Legend* are looking for articles describing ongoing, recently completed, or recently awarded projects. "Newsworthy" items on your organziations, accomplishments of your personnel, or event/meeting anouncements….are all welcome. Contributions should be sent to Dave McCraw.

Do you have information about a project, new techniques, GIS and related issues, announcements, news, etc. that you would like published in the Map Legend?

Continued-From Page 1

LANL's GISLab

GISLab Team Leader: Paul M. Rich (*pmr@lanl.gov*)

Mission: The Geographic Information System Laboratory (GISLab) is dedicated to excellence in Geographical Information System (GIS) science and technology at Los Alamos National Laboratory (LANL). GISLab's mission is three-fold:

- to provide intellectual leadership concerning GIS science and technology;
- to conduct basic and applied GIS research;
- to provide GIS services for LANL projects and operations.

Background: GISLab is part of the LANL Earth and Environmental Science Division, EES-9 (see *http://gislab.lanl.gov*). The GISLab staff consists of a team of ten highly skilled, multi-disciplinary scientists and professionals, knowledgeable in GIS technology, environmental & life sciences, geology, modeling, information science, and emergency planning.

What Distinguishes GISLab? GISLab brings to bear more than sixty combined years of high-level GIS expertise, together with LANL's most sophisticated GIS technology -- cutting-edge enterprise GIS capabilities for data warehousing and delivery, 3-dimensional modeling and visualization, and the ability to rapidly develop and support custom GIS applications.

Major Projects:

- ***Environmental Restoration (ER) GIS Project:*** spatial information management, analysis, and mapping support; management and access to ER spatial database.
- ***Cerro Grande Rehabilitation Project (CGRP) GIS:*** spatial data clearinghouse for institutional and fire-related datasets (see *http://www.cgrp-gis.lanl.gov*).
- ***Yucca Mountain Project (YMP):*** mapping and analysis support, advanced visualization, geologic hazard assessment, decision support.
- ***Other Projects:*** Infrastructure Assurance Analysis Program, hydrological modeling, floodplain mapping, environmental security and urban modeling, climate modeling, integration of spatial analysis and numerical modeling.

GISLab Research and Development:

- ***Spatial information management:*** spatial data warehousing and enterprise GIS; integrated acquisition, management, analysis, and visualization; geoinformatics; data stewardship;
- ***GIS tool development and 3D capabilities:*** earth systems and environmental modeling tools, web-based enterprise GIS tools, rapid mapping, 3D GIS, and advanced computing for GIS;
- ***Environmental science:*** hydrology, carbon cycling, climatology, ecology; coupled modeling; local, mesoscale, and regional modeling;
- ***Decision support:*** natural hazards mitigation; consensus building tools; land stewardship.

GIS Services: GISLab offers a full suite of GIS services and consultation in support of LANL projects, including cartography (hardcopy and internet), data service via SDE and Oracle, custom GIS applications, GPS mapping, spatial and numerical modeling, internet GIS, and consultation on spatial information management and GIS technology. Over the years GISLab has produced >12,000 original maps and >32,000 map copies for customers within and outside LANL.

Challenges for Enterprise GIS

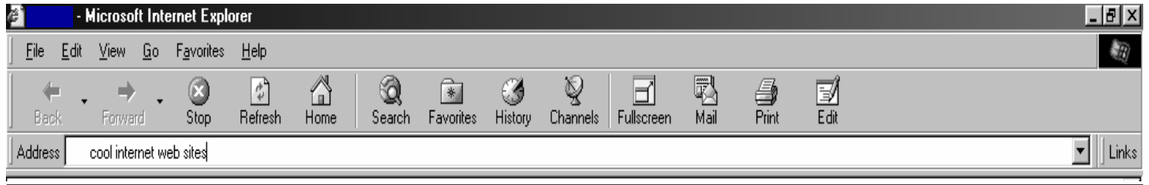
Gordon Keating, Paul M. Rich, and
Marc S. Witkowski; GISLab,
Earth and Environmental Science Division,
Los Alamos National Laboratory;
contact: *gkea@lanl.gov*
(based on Los Alamos Report LA-13930-MS)

Despite rapid growth in the use of geographical information system (GIS) technologies in public and private organizations, recent advances in data storage, processing, and networking do not necessarily result in increased data accessibility. With the goal of enhanced geospatial data sharing within and across organizational boundaries, organizations increasingly focus on enterprise, or institutional, solutions to effective information exchange, thereby avoiding redundant systems and services and incompatible infrastructure (Keating et al. 2002, 2003, Witkowski et al. 2003). Though most current efforts focus primarily on data sharing issues, enterprise GIS can also include shared infrastructure and analysis resources. Enterprise GIS is a virtual rallying call.

LA-14007-MS
Approved for public release;
distribution is unlimited.

Geographic Information System (GIS)
Emergency Support for the
May 2000 Cerro Grande Wildfire,
Los Alamos, New Mexico, USA

Los Alamos
NATIONAL LABORATORY



Cool Internet Web Sites

November 2003 - GIS Job Sources (!)

For this edition of Cool Web sites, I've chosen to focus on websites that specifically host GIS Job Possibilities. So if you are looking to better yourself, your significant other, or your amazingly computer-literate dog, (ahem!) etc., read on! There are a lot of resources for GIS Job seekers, in fact, I was quite amazed at all the offerings. These are culled from a variety of trade journals, news letters and email news letters and other websites. This is most likely, not an exhaustive list and as always, if you have any additions, please feel free to contact me at drbleak@sandia.gov or at 505.284.2535.

GeoJob Source	*http://www.geojobsource.com*
GIS Jobs Clearing House	*http://www.gjc.org*
GIS Jobs.com	*http://www.gisjobs.com*
GeoSearch, Inc.	*http://www.geosearch.com*
GeoCommunity Career Center	*http://giscareers.com*
CareersCafe.com GIS Jobs	*http://www.careerscafe.com/more_featured_jobs.php?site=GIS*
GIS Connection Jobs list	*http://www.gisconnection.com*
GIS Jobs International	*http://www.gisjobs.com.au*
Geospatial Information & Technology Association (GITA) Career Center	*http://gti.hrdpt.com*
GIS Lounge Career Resources	*http://www.gislounge.com/library/career.shtml*
Society for Conservation GIS Job Page	*http://www.scgis.org/GISjobs.html*

New Mexico Geographic Information Council (NMGIC) Fall Meeting 2003
Agenda, November 20, 2003

"GIS: What's the Big Picture? Part I. Adventures in Web Mapping"

8:00-8:30	Set up / coffee / check-in
8:30-9:00	Welcome and Announcements Bart Matthews - Introduction Stan Morain - New Initiatives in UNM Geography Gary Kress - USGS Update Carol Earp - Election Results
9:00-9:30	Scholarship student speakers Nathaniel Todea - "Estimating Runoff Using NEXRAD Radar Data in Rural New Mexico" Mark Romero - "A Crime Mapping Study at the El Paso/Juarez Border" Emily Clary - "Mapping Potential Mosquito Habitat and at Risk Populations for West Nile Virus in Monterey, CA"
9:30-10:00	Marc Witkowski (LANL) - "Enterprise GIS Design"
10:00-10:15	Break
10:15-10:45	Jill Williams (Bernalillo County) - "An ArcIMS Implementation"
10:45-11:15	John Lovato (Qwest) - "Communications Planning Applications"
11:15-11:45	Karl Benedict (UNM-EDAC) "RGIS Web Interface"
11:45-12:00	GITA message
12:00-1:30	Lunch and User Posters/Demos
1:30-2:00	Gar Clark (OSE) - OSE talk
2:00-2:30	Steve Lime (MDNR) - "UMN MapServer, OpenSource Web Mapping"
2:30-3:00	Jack Lloyd (Pima County, AZ) - "Data on Demand: Delivering GIS Information Over The Internet"

NMGIC Workshop

Friday, November 21, 2003

UNM Science & Technology Park
801 University Blvd SE
Albuquerque, NM

Introduction to the Minnesota Map Server:
An Open Source Web Mapping Technology

There is no cost to attend the workshop,
however we kindly request that you register for the workshop to ensure
enough materials are prepared. Your cooperation is appreciated.

You can register for the MapServer Workshop at: http://wrri.nmsu.edu/misc/nmgic/wsregis.html

The evolution of data management in large organizations typically follows a "punctuated equilibrium" model (Gould and Eldredge 1977), in which the status quo limits growth or change until the system is disturbed and then rapid change occurs, followed by a new status quo. Such a disturbance may come in the form of a natural or man-made disaster, during which urgency demands action, the limitations of the existing system are exposed, and necessity opens the door for change. In the aftermath of the destructive May 2000 Cerro Grande wildfire (Mynard et al. 2003), GIS and information management (IM) experts at Los Alamos National Laboratory (LANL) are considering options for improved geospatial data management and information exchange, based on lessons learned during and shortly after the fire.

Jack Dangermond, CEO of ESRI, Inc. expounds five elements for success of enterprise GIS: 1) attain management support, 2) develop a plan, 3) be customer focused, 4) ensure in-house "ownership" for the process, and 5) build a "team of two" of technical expertise and management support to make enterprise GIS a reality. The key to success is the development of a sound geospatial information management plan. Like any business plan, the geospatial information management plan must be financially viable and technically sound. The plan should address five aspects: 1) design specification, 2) resource evaluation, 3) logical design, 4) physical design, and 5) implementation. The scope of the implementation plan encompasses tasks, methods, and activities; a schedule; funding sources; and organizational responsibilities (Witkowski et al. 2003). A complete geospatial data cycle provides an overarching design framework (Figure 1).

At LANL, as in many large institutions, the level of expertise of individual staff and the capabilities of project teams are high. Because of the large size and long time frame of various projects, there is also significant GIS infrastructure in place in the form of hardware, commercial software licenses, and custom software applications. There is typically good informal communication among GIS experts in the institution as a result of ongoing collaborations. In general, small teams of GIS professionals throughout LANL work well internally and meet project needs within the scope of individual projects and organizational mandates. However, at the larger level of the institution as a whole, the geospatial data cycle (Figure 1) is broken, and GIS coordination is difficult. The translation from small, semi-independent GIS teams to an institutional, enterprise GIS involves many challenges, including duplication of facilities, lack of coordination, incompatible data format and architecture, inconsistent quality assurance and change control, and lack of data protection.

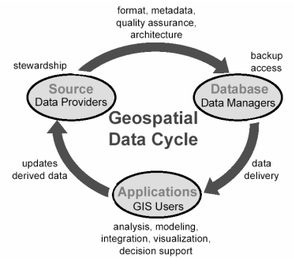


Figure 1. **A complete geospatial data cycle includes a full constellation of necessary steps in the flow of data from source to database to applications, and includes feedback in the form of updates and derived data.**

Enterprise GIS is a natural result of the evolution in geospatial data sharing within institutions, but this change can be painful. A part of evolution is resistance to change, and this is manifested in unique ways at each institution. This resistance is affected by different stakeholder roles and stereotypes (e.g., operations vs. research). In addition, the typically excellent working relations among GIS professionals at the grass-roots level can be limited by organizational divides. In the final analysis, an enterprise GIS design for any large organization must meet the needs and missions of a broad spectrum of stakeholders; the challenge lies in striking a balance in the degree of centralized storage, administration, and procedural control while serving the needs of the GIS community for streamlined data documentation, access, and compatibility.

There is a clear need for efficient data sharing and enterprise-wide data standards, but complete centralization of geospatial (and much tabular) data may not be in the best interests of the diverse GIS stakeholders. The metadata clearinghouse must be constructed and populated, per Executive Order 12906, as updated in OMB Circular A-16, and standards for data quality, format, access and documentation must be enforced by a cross-organizational body such as the recently created LANL GIS Steering Committees. While many individual data sets can reside with the data owners, the existence, status, and access mechanism must be made known. Certain core data of near-universal utility, such as infrastructure, topography, and orthophotography, should be placed in a central repository with adequate change control and data currency administration. Implementation of an institutional solution to enterprise GIS requires slightly greater burden on individual GIS users, but the value in efficient data sharing far outweighs the extra work, especially as stakeholders adopt sound information management and business practices.

The transition from numerous small, semi-independent GIS teams to an integrated, institutional GIS poses many challenges, but the benefits promise to be huge.

References Cited

Gould, S.J. and N. Eldredge, 1977, Punctuated Equilibria: Tempo and Mode of Evolution Reconsidered. ***Paleobiology,*** *3(2), 115.*

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Witkowski, M.S., P.M. Rich, and G.N. Keating. 2003. **A Prototype for Enterprise GIS,** LANL Report LA-14027.

GIS Day Showcases LANL Expertise

On November 19, 2003, LANL will be holding a GIS Day open house on the second floor of the Study Center from 9:00 AM to 4:30 PM. All U.S. citizens and foreign nationals with a LANL badge are invited to attend.

LANL's GIS Day open house will include an array of presentations, posters, demonstrations, and discussions to highlight how GIS is used in a range of Laboratory applications. GIS has significant and widespread uses in a number of existing programs and can be a major capability in new and developing programs. For example, the emergency operations team used GIS extensively during the Cerro Grande Fire to track the fire's movement. After the fire, analysts used GIS to analyze flooding and erosion risks and map the extent of fire damage.

The day will open with a welcome address from Ray Neff, LANL Chief Information Officer. Then Gar Clarke, a nationally recognized GIS advocate, will give the keynote address, "GIT Power: Enterprising Map and Process", at 9:10 AM. Additional presentations during the day will include "Enterprise GIS," "GIS and Biowatch," "GIS and Hurricane Isabel," "GIS and Transportation," and "Federal GIS One-Stop Initiative" (a roundtable discussion led by Gar Clarke). A light lunch will be provided for lecture attendees.

GIS Day is a national, grassroots event designed to showcase real-world applications of GIS technology. GIS Day events are held every November 19 at schools, businesses, and other organizations. GIS Day is sponsored by the National Geographic Society as part of its exciting new initiative called Geography Action. Other sponsors include the Library of Congress, Sun Microsystems, Hewlett-Packard, ESRI, the Association of American Geographers, University consortium for Geographic Information Science, and the United States Geological Survey.

Outside Visitors: Please RSVP
Visitors who wish to attend the open house **must** RSVP to Mary Bowen (mbb@lanl.gov). Ask her where to park and directions to the Study Center, where you can pick up your badge at 8:30 AM.

Don't Bring Your Computer
Non-LANL computers are not allowed in the Study Center. If you need to make special arrangements to bring your computer for a demonstration, contact John Huchton at *huchton@lanl.gov*.

LANL GIS Day Agenda,
November 19, 2003

8:30
Visitor badging begins.

9:00-9:10
Welcome and Introduction - Ray Neff, LANL CIO

9:10-10:10
"GIT Power: Enterprising Map and Process" - Gar Clarke, NM Office of the State Engineer

10:10- 11:20
"Enterprise GIS" - Marc Witkowski, Paul Rich, Gordon Keating, GISLab, Environmental Geology and Spatial Analysis Group (EES-9), Earth and Environmental Sciences Division, LANL

11:00 - 2:00
Poster session in the Study Center Gallery

11:30 - 1:30
Demonstrations in the Study Center Lecture Room

1:30-3:00
"GIS and Biowatch" - Michael Brown, "GIS and Hurricane Isabel" - Steve Linger, "GIS and Transportation" - Ed VanEeckhout and Kristi Henson, Energy and Infrastructure Analysis Group (D-4), Decision Applications Division, LANL

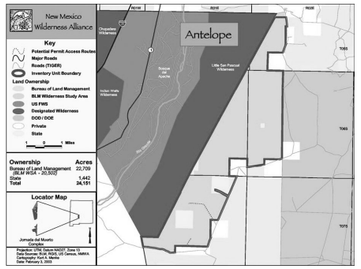
3:00-3:15
Break

3:15-4:30
"Federal GIS One Stop Initiative" - roundtable discussion with Gar Clarke, NM Office of the State Engineer.

Book Review: "New

Well folks, your NMGIC GPS Committee Chairman, Bill Stone, has really outdone himself now. With the release of his brand new book, ***New Mexico Then & Now***, published by Westcliffe Publishers, I personally believe he has stepped out from beyond the realm of America's greatest landscape photographers. In 2002, he adequately demonstrated that his work belonged in the same league with the likes of Ansel Adams and Elliot Porter with the publication of ***New Mexico's Continental Divide Trail*** and ***Along New Mexico's Continental Divide Trail***, in which he collaborated with author Robert Julyan and Utah photographer Tom Till (both published by Westcliffe also—see the review in the *Map Legend*, vol. 13, no.1). In ***NM T&N***, by using comparative repeat photography, Bill matches archival historic photos taken "then" with his contemporary compositions of the same scenes. The result is a spectacular geographic expose' on over two centuries of New Mexico landscape: the breathtaking light and clarity of the Land of Enchantment is captured in Bill's work, and the photo pairs illuminate the ecological changes in its environment, as well as the history of its diverse cultures. This is powerful stuff!

The 156-page book is in a hard-cover, 11x14-inch coffee-table format, just in time for Christmas! Its 115 photo pairs are divided into "portfolios" by region: Santa Fe, Upper Rio Grande, Albuquerque & Vicinity, Northwestern Plateau Country, Northeastern Mountains and Plains, Southeastern Mountains and Deserts, and Southwestern Basin & Range Country. Each portfolio is introduced with essays written by Jerold Widdison, a geographer and planner from Albuquerque. Furthermore, each photograph is described by Stone: the "then" photos often tell of the photographer, his efforts involved in shooting the scene as well as a historical account of what the scene reveals; the "now" photo descriptions often reveal the lengths that Bill had to undertake to capture exactly the same scene wherever possible, and commentary on changes that have occurred there.



Maps were made for each region, complex and potential wilderness unit. These included customized legends, acreage tables, and inset maps. Descriptions tell how each unit met the requirements and intent of wilderness as outlined in the Wilderness Act. The final result is a document over 450 pages long with numerous photographs and nearly 200 highly customized maps.

GIS also allowed us to quantify the results of the inventory. Of the 13.5 million acres of BLM public lands in New Mexico, over 950,000 acres, or 7%, are currently protected in 53 Wilderness Study Areas. However, NMWA's inventory indicates that 3 million acres, or 22% of BLM lands in 158 units qualify for wilderness designation. The addition of nearly half a million acres of State trust lands that fall within the inventory unit boundaries yields a total of 3.5 million acres of public lands that qualify for wilderness designation under the Wilderness Act.

With this document NMWA is armed with all the facts and figures they need to move forward with their mission, "to ensure the protection and restoration of all remaining wild lands in New Mexico through administrative designations, federal Wilderness designation, and on-going advocacy to identify and protect New Mexico's wild places."

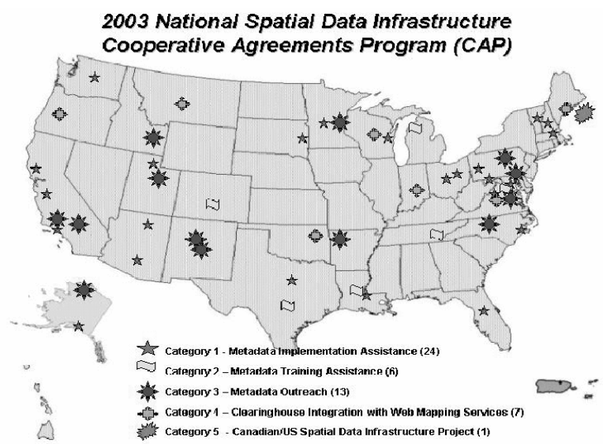
-Kurt Menke
NMGIC Secretary

New Mexico Receives Two FGDC Cooperative Agreement Projects

The Earth Data Analysis Center (EDAC) at UNM and the Department of Geography at (NMSU) each are recipients of FGDC awards under the 2003 Cooperative Agreements Program (CAP). Approximately $1,076,000 were awarded to 51 organizations in 29 states under this program. The awards provide funding for metadata implementation, training and outreach; clearinghouse integration with OpenGIS Services; and Canadian/US Spatial Data Development. The CAP strives to encourage resource-sharing projects through the use of technology, networking and more efficient inter-organizational coordination. The list of 2003 awardees is posted on the FGDC website at *www.fgdc.gov*.

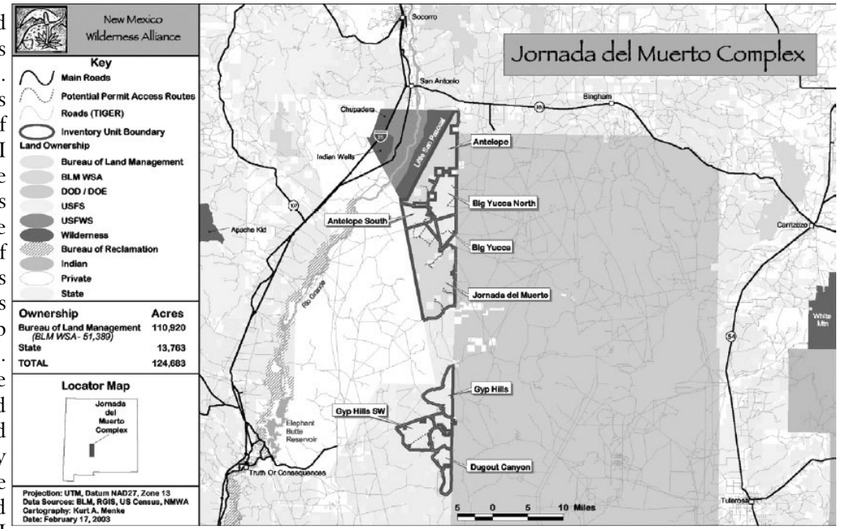
The metadata outreach project led by EDAC aims to: 1) assist state and local agencies in creating FGDC-compliant metadata records; 2) provide training to these agencies, if needed; 3) provide online metadata tools for use by these agencies; 4) broaden exposure to datasets held by these agencies via serving their metadata on the RGIS NSDI clearinghouse node; and 5) promote and encourage development of metadata at state and local meetings. This latter aim includes demonstrating the online metadata tools and recognizing the benefits of making agencies' metadata available to a broader user community. The project focuses on state and local agencies within New Mexico, including environment, water, public health, transportation, forestry, geology, mining/minerals, and biology. The project involves collaboration with at least 18 state and local agencies in New Mexico.

The application process for 2004 CAP grants will start in the fall of 2003, with awards being made in the spring of 2004. For information about the CAP, visit www.fgdc.gov or contact David Painter at *dpainter@fgdc.gov*. The 2004 CAP will be part of a coordinated grant process with Geospatial One-Stop and The National Map. The FGDC contact for information about the coordinated grant process is Milo Robinson, *mrobinson@fgdc.gov*.



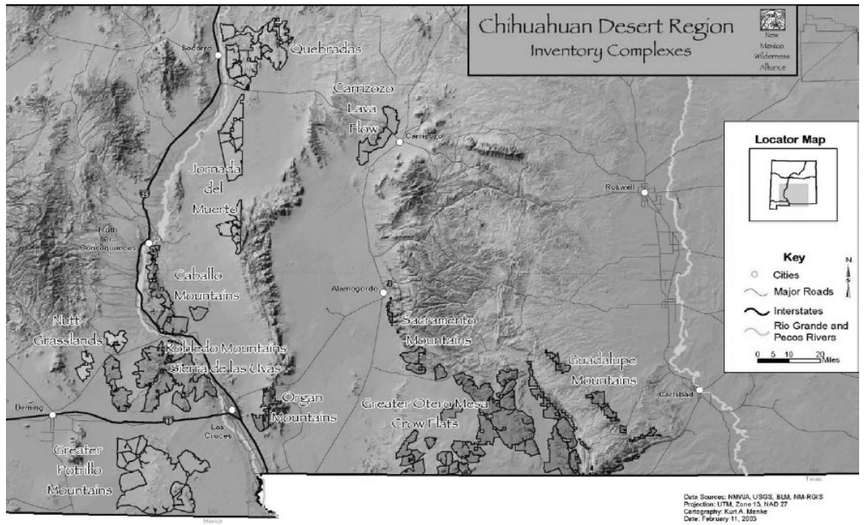
Credit: FGDC website at http://www.fgdc.gov

Grassroots GIS: The New Mexico Wilderness Alliance Story



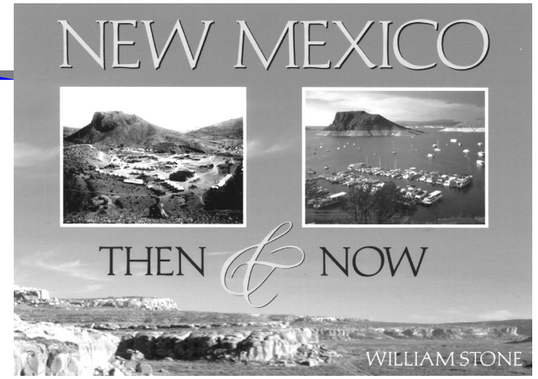
Government agencies and businesses aren't the only ones utilizing GIS these days. Many non-profit organizations are realizing the benefits of spatial technology. When I began volunteering for the New Mexico Wilderness Alliance in 1999 they were beginning their inventory of BLM lands for wilderness potential. Part of their process was to trace land ownership onto USGS 7.5 minute maps. Field workers then used these maps to locate themselves and record survey results. I learned that their entire inventory system was based on these paper maps. This seemed absolutely primitive and I couldn't help thinking that they could be saving time and creating more accurate maps by using GIS. So, I did some research into funding options and discovered that ESRI had a Conservation Grant Program. Naturally we applied, and the grant was approved supplying NMWA with ArcView 3.2, Spatial Analyst, Arc/Info 8.0 and an HP plotter to boot!

With the new state of the art GIS lab we were able to create more sophisticated and accurate maps. In the last three years the GIS lab has been used to generate hundreds of maps. They have been included in their newsletter 'Call of the Wild', sent to funding agencies, used to educate the public, sent to Federal land agencies, and aided their ongoing outreach efforts. This spring NMWA completed their BLM Wilderness Inventory, and produced a comprehensive report that presents the results of the four year process.



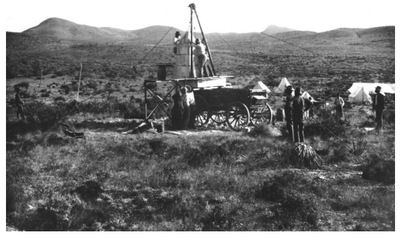
Documenting the results of the inventory was a big job. To expedite the map making process, the two field coordinators were trained in ArcView. Then did the unenviable job of heads-up digitizing all the potential wilderness areas found during field work. Once the data was created and the map design finalized, templates were used to efficiently generate the necessary maps. The report was organized into five regions each containing complexes of individual potential wilderness units.

Mexico Then & Now" by William Stone



Ecologically speaking, the most dramatic changes noticeable throughout the book are the massive invasion of brush in the deserts and grasslands, and the increase in forest / tree density, both in the mountains and urban areas. The historic photos were taken while timber harvesting was in full swing. This is evident in many photos of hillslopes that were sparsely covered then but show lush 2nd growth forest cover today. Many scenes document the amount of erosion, largely accelerated by human activity, that has occurred. The photo pairs of Santa Fe, Albuquerque, Farmington, Las Vegas, and Raton clearly show the results of over 2 centuries of tree-planting settlers!

The history of New Mexico's diverse people literally jump off the pages. The photos of the pueblos and of the Navajos give insight into their lives, both then and now. Changes in historic churches, street scenes, archaeological ruins are fascinating. Many photos show people actively settling New Mexico through their surveying and mining endeavors coupled with the results of their toils.



This highly-recommended book sells for $39.95. While you might find a slightly better price at one of the megachain bookstores, I urge you to support Bill directly by purchasing it from William Stone Photography. All NMGIC members can receive a signed copy of ***NM T&N***, with a personal inscription if you request it, by mentioning to Bill that you're a member when ordering.

To order, send a check or money order for $39.95 plus $4.00 for shipping (NM residents must also add an additional $2.32 for gross receipts tax) to:

William Stone Photography
P.O. Box 14091
Albuquerque, NM 87191

You can contact Bill directly at

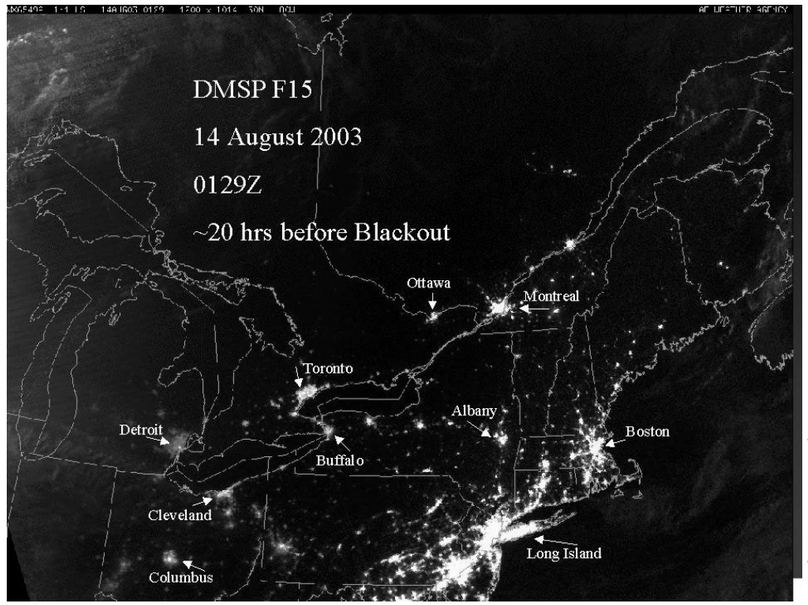
505.275.9576 /
bill@williamstonephoto.com

and be sure to visit his webpage (*http://www.williamstonephoto.com*)

Bill selected these 3 photo pairs, which in no way do the originals justice, for the *Map Legend* because of their surveying subject matter and that they are among his favorites. The top pair show the Four Corners Monument; the middle pair show the International Boundary Monument # 40 in the northeastern corner of the boot heel (the historic photo shows the government survey crew moving the monument to its correct position in 1892 prior to the creosote bush invasion); and the lower two document the fascinating story of the establishment of the Colorado—New Mexico state line along the 37th parallel, which moved twice and is being resurveyed here in 1902.

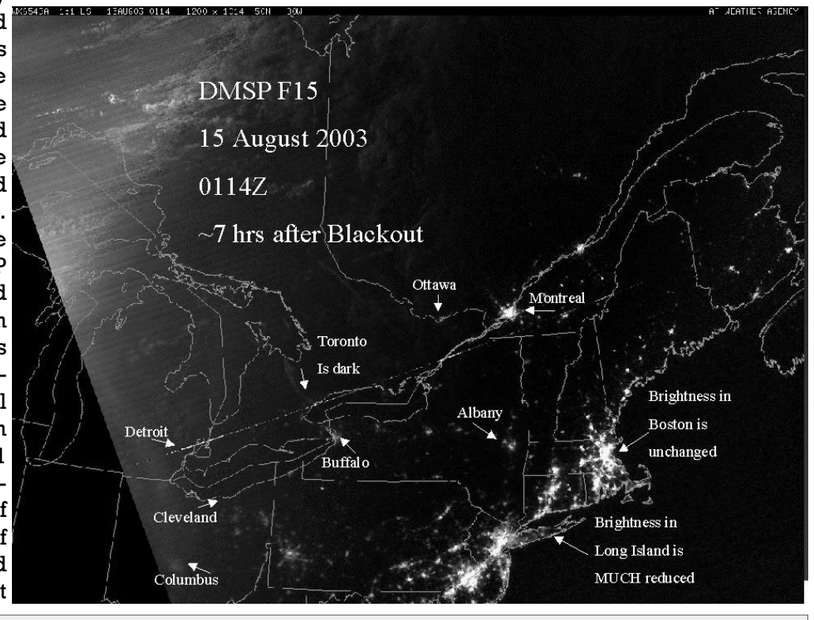
-Dave McCraw
NMGIC Public Relations

NOAA/DMSP Images of the Northeast Blackout…



The historic Northeast Blackout of 15 August 2003 which left 50 million Americans without power is dramatically depicted here in before and after images of night lights taken by the Defense Meteorological Satellite Program (DSMP) satellites and processed and posted by the National Oceanic and Atmospheric Admin. (NOAA). Run by the Air Force Space and Missle Center, the DMSP designs, builds, launches, and maintains satellites which monitor the earth's meteorological, oceanographic, and solar-terrestrial physics environments. Each DMSP satellite has a 101 minute, sun-synchronous near-polar orbit at an altitude of 830km above the surface of the earth. The visible and infrared sensors collect images across a 3000km swath, providing global coverage twice per day. The combination of day/night and dawn/dusk satellites allows monitoring of global information such as clouds every 6 hours. The microwave imager and sounders cover one half the width of the visible and infrared swath. These instruments cover polar regions at least twice and the equatorial region once per day.

A comparison of the photos reveals that while Boston and Providence were unaffected, the megalopolis stretching from Baltimore through New York to Hartford was greatly dimmed and many midwestern cities (e.g., Detroit, Cleveland, and Toronto) were completely dark.



…And The Famous Hoax

The image shown above hit the Internet shortly after the blackout and was emailed to many scientists and reporters, many of whom believed it to be authentic and used it. It turned out to be a hoax however. When examined up close, the colors appear to be off. When examined in Adobe Photoshop, and tweaked by adjusting the levels, its fake nature can clearly be seen in the lower image. Other clues that the image was not real were posted on the Urban Legends website (*http://urbanlegends.about.com/library/bl_blackout_photo.htm*)

1. There is no imaging satellite named "GeoStar."
2. The time stamp shows "23:15 EST," but satellite images are usually marked in "UT" for Universal time. In addition, the U.S. was on Daylight Savings Time.
3. The "blackout" portion of the image extends too far south and not far enough west.
4. The "blackout" portion of the image is too dark. On close examination, darker than even the pitch-black shade of the ocean and waterways-as compared to the dark blue of the less-inhabited land areas visible elsewhere in the picture.
5. Compare the faux image to the actual satellite photographs of the event, which cover a much smaller area and are considerably less dramatic.
6. The hoax image is, infact a cropped, doctored version of a well-known composite image created from satellite photos take between 1994 and 1995 by the National Oceanic and Atmospheric Administration (NOAA) and the Defense Meteorological Satellite Program (DMSP).

Moral of the story:

If you use images from the Internet:

- Use images from reliable sources - Like the federal government, academics that are experts in the field, or scientific institutions.
- Make sure you understand the lineage for the image -- which satellite system, who processed it, and who interpreted it.
- Use common sense! Does the image seem to make sense?
- When in doubt, check it out! Use the Librarians at the University, or other knowledgeable experts in information.

This information has been supplied by Denise Bleakly, who is currently working on a poster, in collaboration with librarians from Sandia National Labs, on the perils of downloading imagery and other materials from the Internet. She has agreed to share this information in a future issue of the *ML*!